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FOLEY AND LARDNER LLP  
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3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER
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BAYOU, AMENE SETEGNE

ART UNIT	PAPER NUMBER
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3746

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/586,735	<b>Applicant(s)</b> BURK, ROLAND	
	<b>Examiner</b> AMENE S. BAYOU	<b>Art Unit</b> 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/21/06</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 19 is objected to because of the following informalities: Claim 19 recites "t the ". We assume this is a typographical error and the applicant intends to mean "The". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 10, 15, and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. In re claim 10, it recites "at least 10% ,preferably by at least 20% and in particular preferably by at least 50%" which is a range within a range.
5. In re claim 15, it recites "between 0.5mm and 5mm,preferably by 1mm to 3mm", which is a range within a range.
6. In re claim 20, it recites "greater than 0.5 mm,preferably greater than 1.0 mm, and in particular greater than 1.5 mm", which is a range within a range.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that forms the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States

8. Claims are rejected under 35 U.S.C. 102(b) as being anticipated by Hirose et al.(US patent publication number 20020176786).

9. In re claim 1, 2,4-9,12-16,21 Hirose et al .'786 disclose a reciprocating refrigerant compressor including:

- A device (100),in figure 1,for compressing gaseous media, comprising at least one compression space (3) into which the gaseous medium can enter and from which the gaseous medium can discharge; a first valve means having at least one first opening (28) and at least one first covering means (35,in figure 2) essentially covering the first opening (28) at least intermittently, the first valve means (9) allowing the gaseous medium to enter the compression space and essentially preventing a discharge of the gaseous medium from the compression space [paragraph [0033]];a second valve means having at least one second opening (30) and at least one second covering means (31) essentially covering the second opening (30) at least intermittently, the second valve means allowing a discharge of the gaseous medium from the compression space and essentially preventing the gaseous medium from entering the compression space (paragraph [0033]), wherein the narrowest free cross section of one valve means (28) considerably exceeds the narrowest free cross section of the other valve means (30),clearly shown in figure 3.

10. In re claim 2, Hirose et al .'786 disclose a reciprocating refrigerant compressor including:

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- The narrowest free cross section of the first valve means (28) considerably exceeds the narrowest free cross section of the second valve means (30), in figure 3.

11. In re claim 4, Hirose et al .’786 disclose a reciprocating refrigerant compressor including:

- The device (100) has a piston means (27) arranged so as to be movable relative to the compression space , in figure 1.

12. In re claim 5, Hirose et al .’786 disclose a reciprocating refrigerant compressor including:

- At least one covering means (35) is designed as a reed, in figure 6B and paragraph [0036], lines 1-2.

13. In re claim 6, Hirose et al .’786 disclose a reciprocating refrigerant compressor including:

- At least one valve means (28) is arranged in a valve plate (9) , and both valve means (28,30) are arranged in valve plate (9), in figure 1.

14. In re claim 7, Hirose et al .’786 disclose a reciprocating refrigerant compressor including:

- The first opening (28) of the first valve means is designed to be noncircular, in paragraph [0061], lines 7-9.

15. In re claim 8, Hirose et al .’786 disclose a reciprocating refrigerant compressor including:

- The first valve means has a plurality of first openings (28), in figure 3.

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16. In re claim 9, Hirose et al .’786 disclose a reciprocating refrigerant compressor including:

- The periphery of the at least one first opening (28) of the first valve means is greater than the periphery of the at least one second opening (30) of the second valve means, in figure 3

17. In re claim 12, Hirose et al .’786 disclose a reciprocating refrigerant compressor including:

- The covering means (35) of the first valve means, has at least one projection, in figure 6A.

18. In re claim 13, Hirose et al .’786 disclose a reciprocating refrigerant compressor including:

- At least one covering means (35) is fastened to the valve plate (9,by using fixing member 33),in figure 1.

19. In re claim 14, Hirose et al .’786 disclose a reciprocating refrigerant compressor including:

- The configuration of at least one covering means (35) is adapted to the configuration of the opening (28) assigned to this covering means, in figure 5.

20. In re claim 15, Hirose et al .’786 disclose a reciprocating refrigerant compressor including:

- The peripheral margins of at least one covering means (35) project beyond the peripheral margins of the associated opening (28) by between 0.5 mm and 5 mm,in figure 5.

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21. In re claim 16, Hirose et al .’786 disclose a reciprocating refrigerant compressor including:

- At least one opening (28) has a peripherally encircling groove, in figure 3.

22. In re claim 21, Hirose et al .’786 disclose a reciprocating refrigerant compressor including:

- The use of a device (100) in an air-conditioning system, in particular for a motor vehicle, in paragraph [0002].

### ***Claim Rejections - 35 USC § 103***

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. Claims 3 and 20 are rejected under 35 U.S.C 103(a) as being unpatentable over Hirose et al .’786.

25. In re claim 3 Hirose et al .’786 disclose the claimed invention except mentioning that the factor which one valve cross section exceeds the other valve cross section is at least 2. This limitation is merely dependent on design choice based on factors such as flow rate. In re claim 20 Hirose et al .’786 disclose the claimed invention except mentioning that the distance between the valve covering and the corresponding opening is greater than 0.5mm. However there is a practical gap to be maintained between the valve cover and the hole itself to ensure proper sealing and choosing such gap is also a design factor that would be obvious to one skilled in the art. In addition please note it has been held that discovering an optimum value of a

result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

26. Claim 10 is rejected under 35 U.S.C 103(a) as being unpatentable over Hirose et al .’786 in view of Une et al. (US patent publication number 20030091451).

27. In re claim 10 Hirose et al .’786 disclose the claimed invention except the following limitation which is taught by Une et al.’451:

- The at least one opening of the first valve means, compared with an imaginary circular opening which has the same cross-sectional area as the at least one first opening, has a periphery which exceeds the periphery of imaginary circular opening ,in paragraph [0046],lines 8-11.

28.It would have been obvious to one skilled in the art to modify the compressor of Hirose et al .’786 by making the perimeter of the opening greater than the crossectional area of a circular opening having the same crossection as taught by Une et al.’451 in order to smoothen the flow and reduce vibration as taught by Une et al.’451 in paragraph [0010] and [0014].Please note that choosing the proper percentage would be merely a design choice based on experimental factors. Also it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

29. Claim 11 is rejected under 35 U.S.C 103(a) as being unpatentable over Hirose et al .’786 in view of Brown (US patent number 6053713).



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30. In re claim 11 Hirose et al .'786 disclose the claimed invention except the following limitation which is taught by Brown 713:

- At least one covering means (17), has at least one aperture (20).

31. It would have been obvious to one skilled in the art to modify the compressor of Hirose et al .'786 by including aperture in the valve covering as taught by Brown 713 in order to communicate the fluid to a required chamber.

32. Claims 17-19 are rejected under 35 U.S.C 103(a) as being unpatentable over Hirose et al .'786 in view of Thermoking (US patent number 1500391).

33. In re claim 17 Hirose et al .'786 disclose the claimed invention except the following limitation which is taught by Thermoking '391:

- The valve plate has at least one surface section having a coating (15) which is deformable at least in sections, in page 2, lines 5-21.

34. It would have been obvious to one skilled in the art to modify the compressor of Hirose et al .'786 by applying coating to the valve structure as taught by Thermoking '391 in order to reduce wear and dampen the valve movement.

35. In re claim 18 Hirose et al .'786 in view of Thermoking '391 disclose the claimed invention :

Thermoking '391 disclose :

- A least one covering means has at least one surface section having a coating (15) which is deformable at least in sections in page 2, lines 5-21 .

36. In re claim 19 Hirose et al .'786 in view of Thermoking '391 disclose the claimed invention :

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Thermoking '391 disclose :

- The coating (15) has a material which contains Teflon, in page 2, lines 5-21.

### ***Conclusion***

37. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amene S. Bayou whose telephone number is 571-270-3214. The examiner can normally be reached on Monday-Thursday, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/  
Supervisory Patent Examiner, Art  
Unit 3746